Art. XII.—*Notice of a Febrile Disorder which has prevailed at Edinburgh during the summer of* 1843. By David Craigie, M. D., &c.

For the last four months, or rather more, a febrile disease of a peculiar character, has been prevailing among great numbers of the labouring class of the population of this city. This febrile disorder is different from *typhus* and *synochus*, the usual forms of continued fever in Edinburgh and the neighbourhood, in several respects. 1*st*, It does not proceed in the same manner, or with the same kind of symptoms, being shorter in duration, but always almost showing a disposition to recur, in other words, the patients re-lapsing 2*d*, It

presents not the usual febrile eruption of red spots which takes place in typhus. *3d*, It shows not the same tendency to violent disorder of the brain and its membranes, which, in several cases of genuine typhus, is observed to take place. And *4th*, While it affects great numbers of people, it shows not nearly the mortality with which typhous fever is attended.

The mode in which this fever proceeds and its leading characters, may be understood by the following description.

The patient is attacked with loss of appetite, sometimes sickness and vomiting, and always thirst, accompanied or speedily followed by pains in the head, back, limbs, and joints generally, and an overwhelming sense of feebleness. When patients are examined in this state, they generally lie moaning as if from great distress and corporeal suffering, and when interrogated, answer that the whole body is in pain. The pulse varies from 90 to 96 or 104 on the first two days, with a sense of fulness and tension; but on the third or fourth it may rise to 120. The skin is at first hot and rather dry, but becomes more or less moist about the third or fourth day, yet without effecting a solution of the disease. The tongue is at first covered with a whitish moist fur, which afterwards becomes thicker and a little dry, assuming a colour slightly brownish. The patient is during the whole of this time, that is, for three, four, or five days, without sleep, and is restless; yet delirium is very uncommon.

The epigastric region is always tender or painful and does not bear pressure well. In a certain proportion of cases there is pain in the right hypochondriac region; in several there is pain in the left hypochondriac region; and, in a few, pain in the umbilical or infra-umbilical region, is the subject of complaint.

No eruption of spots is observed similar to that observed in genuine typhus. But, in a certain proportion of cases, an eruption of dark-red spots, like those of purpura, was observed on the persons of the patients. In some instances these bore so close a resemblance to flea-bites, that they were entirely disregarded or ascribed to this cause. In others, however, they appeared connected with the state of the individual's health. At length, it was impossible to doubt, from the frequent occurrence of these purple spots, that they were connected with the disease. They were seen in the first attack alone; and as that declined, these spots disappeared. They did not, so far as I am aware, appear in the second stage or relapse. In some instances the rose-red spots of typhus were observed; but these were regarded as instances of a fever quite different.

After the symptoms now mentioned have continued for four or five days, an abatement takes place about the fourth or fifth day, and becomes more complete on the sixth or seventh. Either in consequence of the use of medicine, or spontaneously, diaphoresis comes on, sometimes partially, sometimes generally and profusely; the patient shows the disposition to sleep; the tongue becomes moist, thirst abates, and the pulse becomes less frequent by about 10 or 12 beats, until in the course of twenty-four hours more, as the other symptoms subside, the pulse falls to its natural standard. As the change now mentioned proceeds, the pains in the head, back, and limbs in ge-

neral disappear, or at least are greatly abated. In some cases, however, they either are not abated, or they are actually aggravated, or, the original febrile pains subsiding, are followed by pains which present all the characters of rheumatism or rheumatic gout.

Appetite then returns, usually in proportion as the tongue becomes clean and moist; and the patient is eager for food, which he takes with relish. In some instances much weakness, especially if the sweatings be profuse and continuous, is complained of, and the pulse is actually feeble and small. This state of convalescence proceeds for three, four, or five days; and then most commonly without any distinct warning or preliminary signs, all the symptoms of fever are re-established, nearly in their original force, and continue for three, four, or five days longer. The appetite is gone, the patient is sick, or may even be attacked with vomiting; headach is more or less severe; the face is flushed; the tongue is covered with the white moist fur, which speedily becomes thick, gray, or of a light-brown, and dry; the skin is hot, the pulse quick, and the pains in the back and limbs are urgent, and the individual is restless and sleepless.

This state of symptoms continues about four, five, or six days more, at the end of which time the skin becomes moist, natural sleep returns, the tongue becomes more or less moist, and eventually more or less clean, the pulse falls, and the patient, though feeble, feels that appetite is returning.

In general, convalescence is now established without any accident or interruption; the appetite is good; food is taken with relish and easily; strength returns, and all the painful feelings disappear.

The proportion of cases in which relapses or second attacks take place is very considerable, so great, indeed, that several observers believed that they occurred in all the cases. I find that, from accurate accounts kept of 182 cases, in 110 relapses had taken place, which is equivalent to $60\frac{4}{9}$ per cent. exactly.

A third attack of febrile symptoms has been observed in a very small proportion of cases, I think not more than 3 in 346 cases, or less than one per cent. These third attacks were more frequent in Glasgow.

Such is the course in a large majority of cases. In a few, deviations from this are observed. One of the most remarkable, if not the most common, is more or less yellowness of the surface of the body and the conjunctiva, often with severe or even fatal symptoms. In the cases in which this symptom takes place, I have usually observed its approach in the following manner.

About the second or third day a faint lemon-yellow tinge is observed on the skin of the face, neck, breast, and belly, and in a very slight degree in the conjunctiva. This tint continues deepening on the face, neck, breast, and trunk generally, and also on the lower extremities, until the whole surface is of a brassy or turmeric-yellow colour. With this yellowness other symptoms were associated, such as sickness and vomiting, great feebleness, and stupor, in a degree more or less intense. Among the cases under my own care, this yellowness took place in eight cases, five females and three

males. In five of these it took place in a very great degree, and in four of these the disease proceeded to the fatal termination. In the other four in which the tint was less deep, recovery took place. In one only of all these cases was this yellowness accompanied by pain in any part of the belly, and by sickness and vomiting.

This occurred in a young girl of 16, named Mary Fraser. On the day of admission, 8th August, she had pain of the whole infra-umbilical region, so considerable as to require the application of leeches two several times. She had also pain and tenderness in the epigastric region and towards the right hypochondriac region, for which first a sinapism, then leeches were ordered to be applied. On the second day (9th August,) a fine lemon-yellow tint appeared on the skin, and was doubtfully perceptible in the conjunctiva. She had also sickness and vomiting, the matter vomited being of a dark grass-green colour. For these symptoms six grains of calomel with half-a grain of opium were prescribed, and the use of turpentine enemata. On the third day (10th August,) the yellow colour was much deeper, and the conjunctiva was now unequivocally yellow. Vomiting continued, the matter rejected being of a darker green colour, though not very abundant. The bowels had been scantily moved. The patient lay in a state of semi-insensibility, unless when roused by the sense of sickness and the act of vomiting. The calomel and opium were continued, as this seemed to be the only remedy which procured even temporary relief; and the turpentine enemata were repeated. On the fourth day the patient was so feeble that a little wine was deemed necessary. The yellowness was deeper and quite general. On the morning of the fifth (12th August) the patient expired. Inspection in this case was not permitted.

In other two cases, occurring one in an elderly female, the other in a middle-aged woman. noted, it was said, for her habits of drinking and other irregularities, the different organs were inspected with care, yet without throwing any clear light on the cause of the yellow colour. In the old woman who had presented first symptoms of bronchial disorder, the bronchial tubes were filled with much viscid blood-coloured mucus. The lungs were also loaded with dark-coloured bloody serum, and blood posteriorly. The stomach contained some yellowish-coloured fluid. The liver was a little compressed on its convex surface, but not unhealthy in its substance. The gall-bladder was filled with bile of a dark-yellow colour; the ducts were pervious, and bile of a light-yellow colour was observed in the hepatic duct. The intestinal mucous membrane was covered by viscid rather adherent mucus. The intestinal glands were natural. All the whitish textures presented a tinge of yellow.

In the middle-aged woman, Jean Macdonald, 35–38, who first showed symptoms of recovery and then became worse, with foul dark-coloured tongue, pain in the epigastric region and left side, and at length deep jaundice with insensibility; the stomach contained remains of food and wine, with much viscid mucus and some yellowish bilious matter; the duodenum was filled with matter tinged with bile, and the ducts were pervious; the liver was natural in structure but covered on its convex surface by a layer of old thick exudation converted into cartilage; the intestines general-

ly were natural; the spleen was softened; and all the white textures tinged yellow with bilious matter.

These cases with yellowness form but a small proportion of the amount. They were always dangerous, and most of the whole fatal cases have taken place among them. In only one case did recovery take place after the surface was deeply tinged yellow.

It is in vain to speculate on the pathological causes of this yellowness of the surface and the white tissues. It can scarcely be doubted that it arises from the presence of bile in the system. In one woman in whom it had not taken place sensibly on the surface, the blood when drawn presented distinct bile on its surface and in the serum. In the woman who recovered, Ann Campbell, the serum discharged by blisters applied to the scalp presented the usual characters of bile.

At the same time, it is clear that it is not from obstruction of the ducts that the bile is diffused over the system. It appears to be the result rather of what has been termed non-elimination, by which is to be understood, probably, incapacity of the liver to secrete or excrete the bile, as it is formed by small quantities in the blood.

The first indication of this form of fever began to appear about the end of March and the beginning of April. The usual cases of synochus and typhus had prevailed during the winter, though not to a great extent. Gradually, however, as the season proceeded, cases of genuine spotted synochus and typhus became less frequent, and cases presenting the symptoms already enumerated became common and numerous. Typhus, indeed, did not disappear; for from time to time well-marked, severe, and even fatal cases of the distemper ceased not to betray the existence of the disease, with its characteristic rose-red eruption, the violent affection of the nervous system, and the disorder in the organs of respiration. In a few cases even the eruption assumed a dark colour, the complexion was livid and dingy, the eyes heavy, turbid, and injected with dark-coloured vessels, and the disease terminated in fatal coma, showing the great affection of the lungs, the dark and unoxygenated state of the blood and poisonous influence on the organs. The great number, however, of cases consisted of those of the class already described, severe in onset, short in duration, with the tendency to recur, and often with rheumatic or arthritic pains. The increase in the number of applications was so considerable in the month of April, that it was found expedient to open another ward for the reception of males. The monthly admission of fever cases which, from October 1842 to the close of February 1843, had varied from 53 to 74, and had not been above the latter number, rose in March to 85, in April to 96, in May to 134, in June to 164, and in July to 251. In the months of May, June, and July 1842, the fever cases were respectively 76, 56, and 55.

Then all the attics were opened for convalescents, in order to give more accommodation for patients under the disease. As the season proceeded, the disease affected greater numbers, and as the applications for admission increased, first one ordinary ward, then another was set apart for fever cases, until it was found impracticable and inexpedient to proceed further in this sort of transmutation.

On Monday the 31st of July, when the total number of patients in the whole establishment, medical and surgical, amounted to 413, the number of fever cases alone was 213. At the same time, in 1842, the number of fever cases had not been above 55.

It was now deemed proper, as the Royal Infirmary could accommodate no more cases, and as from thirty to forty cases were unaccommodated, to apply to the public for funds to open the fever hospital in Surgeon's Square. Accordingly, in a few days, 3d August, this building was prepared for the reception of patients, and in the course of a week, 7th and 8th August, 55 patients, male and female, were received. The numbers afterwards rose to 60, and on the 4th of September they amounted to 85.

Meanwhile the distemper ceased not to spread; and though not fewer than 310 cases were accommodated in the Royal Infirmary and Fever Hospital, there still continued to be many applications for admission which it was impossible to answer. At the 21st of August, as there were still from 40 to 50 persons ill, for whom there was no accommodation, it was resolved to prepare another house in Surgeon's Square, belonging to the Infirmary, for the reception of patients, and by this means from 28 to 30 cases would be accommodated. At this time, 1st September 1843, when this second receptacle for fever cases is filled, and when not fewer than 350 cases are under treatment within the Infirmary and the two Fever Hospitals, there is still a demand for accommodation for 50 patients.

On the nature, nosological character, and causes of this febrile epidemic, it is, perhaps, premature to offer any opinion; for, at the present time, any thing that can be said must be more or less conjectural. That the disease is neither *synochus* nor *typhus* is manifest from the facts already adduced. At first some cases looked like influenza in the catarrhal character of the symptoms; and, in point of fact, catarrh was frequent and epidemic both in Leith and Edinburgh in the months of April and May. Independently, however, of the fact, that epidemic catarrh is never known to continue over the space of three, four, or five months, as this disease appears to have done, the symptoms do not present that exclusive affection of the organs of respiration which is observed in the majority of influenza epidemics. In many respects it presents the characters of a gastric, gastro-hepatic, or gastro-enteric disorder. In others, however, it appears to be of the rheumatic disposition, or at least to present a rheumatic complication. Thus, in several, if not many cases, the patients have suffered much from pains in the joints, large and small, and this, as much at the close of the disease, and after the febrile symptoms had subsided, as during its course. After the fourth or fifth day, for example, when diaphoresis was established, and in some cases became profuse, the pains in the shoulders, arms, and fingers were most excruciating, and in some instances they affected the whole body, so that the patient became quite helpless. This rheumatic complication has taken place both in the first attacks, and also in the second or relapses.

Some professional gentlemen, who have seen yellow fever in the West Indies, have said, that the cases with yellowness resemble

closely cases of yellow fever. It is, nevertheless, scarcely possible with any consistency in nosology or common observation, to admit even the resemblance. *First*, Yellowness took place in a very small number indeed. *Secondly*, It was not like the yellow colour of West India fever, most intense in the face, neck, and breast, and diminishing at remote parts; but it was apparently uniform and general. *Thirdly*, Vomiting was not nearly so common a symptom as it is in West Indian fever; and as to black vomit, it was seen in two or three cases only among the whole. *Fourthly*, As in the great majority of the cases, the disease was from five to seven days duration, though in many instances followed by relapse, and as the symptoms were in general disposed to subside almost spontaneously, it it scarcely possible to believe that the distemper we see here, can be compared in any of its essential characters with one so formidable and so fatal as yellow fever usually is.

When I saw the decided amendment about the fifth day, and the recurrence of the symptoms about the seventh, ninth, or eleventh day, I was disposed to regard the disease as a variety of remittent fever. This idea derived some confirmation from the mildness of all the symptoms about the third day. In many cases this mildness was very remarkable, in the headach being abated, the thirst being diminished, and the patient expressing himself free from complaint. The pulse was rarely much reduced. On the fourth, however, the symptoms were worse; and it was only on the fifth, or towards its close, that a decided remission was observed, and which again became more marked on the seventh day. I am doubtful, however, at present, whether it be possible to verify this idea as to all the cases. Unquestionably the distemper is unlike any febrile affection, which we have been in the habit of observing in this city; and if it turn out, that the characters now specified are uniform, it might be regarded as a gastric fever with remittent type.

Is there any ground to think that it is like the *suette*, or sweating fever of Normandy. Diaphoresis was, about the third or fourth day, not uncommon, and often took place spontaneously; and about the fifth and sixth day it was profuse, and in some instances debilitating.

It has been stated in common conversation by various unprofessional persons, I believe chiefly, that the distemper is very fatal. This is not the fact. The mortality has hitherto been small, and though the distemper attacks great numbers of individuals, it certainly destroys few. I find that, from the beginning of April, not going farther back, to the present date, 15th September, 315 cases have been treated in my own wards, and of these 17 died, of whom 12 were from typhus.

I have said that the disease bears no resemblance to genuine typhus, and have specified, as accurately as possible, the diagnostic marks between typhous fever and the present epidemic. To show how small is the proportion of typhus cases, it was found, on Saturday the 9th September, that, among 364 cases of fever under treatment, or convalescent in the Royal Infirmary and two fever houses, 346 were cases of the epidemic, and only 18 cases of genuine typhus.

As to the causes of this distemper, it is not less difficult to arrive at anything like precise conclusions. It has been regarded as contagious, and, perhaps, it is so. But this is rather a presumption than a well-founded inference, and the mode in which the distemper proceeds is rather at variance with this conclusion. Thus, while it is well-known that continued fever is rather the disease of cold wet seasons than of warm seasons, and, consequently, is usually most prevalent in the winter, this distemper began to show itself at a time when typhus usually diminishes in prevalence, and it has gone on increasing and diffusing itself more and more extensively as the warm weather advanced. Then it has been very much confined to certain localities, which, though it cannot be denied that these are the most densely inhabited in Edinburgh, yet must be allowed to be very favourable for the origin and propagation of a disease depending on atmospherical causes. These localities are, the Grassmarket, the closes in the High Street, the Canongate, and Cowgate. On the other hand, a number of cases have been sent from Musselburgh, Tranent, Penicuick, Haddington, Dunbar, and similar situations, where the population is not dense, and where ventilation is excellent.

It must be observed, nevertheless, that it prevailed very much in families, and it rarely happened that only one member of a family was attacked. Thus, if a father or mother came in first affected with fever, then one or more of the children and the remaining parent very commonly were afterwards attacked.

I learned, some time ago, that a febrile epidemic quite similar in all respects to that which has been prevailing in Edinburgh has been at the same time prevailing in Dundee and in Glasgow. In Dundee the same symptoms, the same duration, and the same liability to relapse was observed; and, in like manner, several cases presented yellowness, and some patients with this symptom died. Among the latter I have been informed that one of the physicians who inspected several of the bodies found much the same appearances as those described by Louis in his account of the necroscopic appearances in cases of yellow fever.

The same form of fever has been prevailing also in Glasgow. The same kind of symptoms, the same duration, and the same tendency to relapse or recur, has been there observed. In certain cases, indeed, in that city three attacks of the symptoms have been recognized in the same individual. Yellowness has in like manner been remarked in various cases; and several of these, I was informed, have terminated fatally.

One circumstance in the Glasgow epidemic favours the idea of propagation of the disease by personal communication much more decidedly than I am aware that it has done in Edinburgh. In the former city many of the females employed as nurses were attacked by the disease. Of this we have little experience in Edinburgh. A few nurses were attacked, but in proportion so small that it is scarcely fair to make the circumstance the foundation of any positive inference. Only one clerk was attacked; and he presented the characteristic symptoms of the disorder.

It appears that a fever, similar to the present in duration and

course, appears to have prevailed at Dublin in 1806, and, according to Dr Bracken, at Waterford in 1817–18–19. *

As to treatment in general, after the use of one or two doses of cathartic medicine, the patients were left very much to the efforts of nature. At first, when the increase in numbers showed the approach of an epidemic distemper, after the exhibition of cathartics, I prescribed the use of the citrate of ammonia or saline julep with one grain of tartrate of antimony in twelve ounces of the mixture; and under this combination the tongue became clean, the skin moist, and the pulse less frequent in the course of three or four days. I found, however, that so great was the tendency to diaphoresis, that it was of little moment what was given, providing urgent symptoms and uneasy sensations were alleviated. Thus pure water or toast-water appeared as efficacious in promoting diaphoresis and procuring sleep as any other means. The patients, however, often spontaneously requested cream of tartar water; and this, with a small proportion of carbonate of soda, to facilitate the solution of the bi-tartrate, they got. In a very few cases was it requisite to apply leeches to the temples on account of the intensity of the headach. In general, when the hair was removed and cold applied, the pain rapidly subsided. When, after this, it did not, an active dose of cathartic medicine was administered.

At the crisis of the disease, when the sweatings were considerable, the weakness great, and rheumatic pains were excruciating, the best remedy I found to be the sulphate of quinine in two grain pills administered three, four, or five times daily. In some cases the debility was so considerable that it was necessary to order small quantities of wine for a day or two, till the appearances of returning strength were manifest.

For the cases in which yellowness took place, it was difficult to say what treatment was best adapted. Those in whom it occurred were persons of deranged health, in general aged, always debilitated. In the most marked and severe case which recovered, that of Ann Campbell, the treatment consisted in the repeated administration of turpentine enemata, calomel and rhubarb by the stomach, the application of one large blister on the coronal and vertical region, and then of another on the occipito-cervical, and afterwards of castor-oil when the power of deglutition was restored. Wine was also allowed this patient at the rate of four ounces daily. Under this method of management the yellowness slowly and gradually but completely disappeared, sensibility and consciousness returned, and convalescence was eventually established.

In other cases, in which the yellowness, though general, was less deep in shade, and the nervous system was less strongly poisoned, calomel in doses of six grains, with one grain of aloes, once or twice daily, followed next morning by a dose of castor oil, was found sufficient to remove the symptoms.

Another remedy was tried by my assistant, Dr Wood. This was the chloride of soda, in doses of twenty drops of the solution every second or third hour. Under its use the patients appeared to get rid of their symptoms in the course of two or three days, very much as by other means.

* Account of the Rise, Progress, and Decline of Epidemical Fever in Ireland. By J. Barker, M. D., and J. Cheyne, M. D. London, 1821. Vol. i. p. 211.